HARTCROWSER

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Earth and Environmental Technologies

Letter of Transmittal

To: Idaho Department of Health and Welfare
Division of Environmental Quality
2110 Ironwood Parkway
Coeur d'Alene, ID 83814-2648

Date: October 13, 1995

Job No.: 2296-05

Attn: Mr. Craig Beck

Re: Avery Landing Site

We are sending the following items:

Date	Copies	Description
10/13/95	1	Second Quarter Performance Report for Product Recovery System - Avery Landing, Idaho

These are transmitted:

☐ *For your information* ☐ *For action specified below* ☐ *For review and comment* ☐ *For your use* ☒ *As requested*

Remarks

On behalf of Potlatch Corporation, we are submitting the attached letter report as required by the Consent Order for the Avery Landing Site.

By: Barry Kellems

Barry L. Kellems, P.E.

Title: Associate

Copies to: Gregg Rapp, Potlatch

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J-2296-05

October 13, 1995

Mr. Gregory A. Rapp
Construction Services Manager
Potlatch Corporation
1100 Railroad Avenue
P.O. Box 386
St. Maries, Idaho 83861

Re: Second Quarter Performance Report
Avery Landing Recovery System

Dear Mr. Rapp:

Hart Crowser is pleased to present the Second Quarter Performance Report for the free product recovery system at the Avery Landing site. This letter report presents the second quarter groundwater elevation and product thickness measurements.

OPERATIONAL CHRONOLOGY AND SCHEDULE

The project chronology and remaining schedule for 1995 are shown in Tables 1 and 2, respectively. The recovery system was completed and first placed into operation at the end of October 1994. Winter conditions limited site access, and the recovery system was shut down for the winter on December 9, 1994.

After the winter shutdown period, the recovery system was restarted on April 10, 1995. On June 30, 1995, we collected groundwater elevation and product thickness measurement representing the first quarter of operation (April, May, June) and submitted this data, along with an evaluation of recovery system effectiveness, to Potlatch on July 31, 1995. On September 21, 1995, we collected groundwater elevation and product thickness measurements representing the second quarter of operation (July, August, and September). This letter report presents and discusses those results.

Because of the inability to operate the recovery system over the winter months, we propose to conduct one more monitoring event this year, prior to system shut down in November or December, depending on the weather and access.

Table 1 - Avery Landing Recovery System Project Implementation Chronology

Completed Milestone	Date
Submit Final Plans and Schedule to IDEQ	August 5, 1994
Pre-Construction Meeting	August 10, 1994
Begin Construction of Recovery System	September 8, 1994
Complete Construction and Startup System	October 27, 1994
Submit Results for Stockpiled Soils to Potlatch	November 4, 1994
Shut Down Recovery System for Winter	December 9, 1994
Submit Record of Construction Drawings and Documentation Report to IDEQ	January 9, 1995
Submit Pre-Construction Flow Map	February 6, 1995
Startup Recovery System in Spring	April 10, 1995
Conducted 1st Quarter Monitoring	June 30, 1995
Submitted 1st Quarter Performance Report	July 31, 1995
Conducted 2nd Quarter Monitoring	September 21, 1995

**Table 2 - Avery Landing Recovery System
Remaining Project Schedule for 1995**

Scheduled Milestone	Date
Submit 2nd Quarter Monitoring Report	October 20, 1995
Conduct 3rd Quarter Monitoring and Shut Down System for Winter	November 30, 1995
Submit 3rd Quarter Monitoring Report	January 5, 1996
Submit Annual Report	January 31, 1996

GROUNDWATER ELEVATION AND PRODUCT MEASUREMENTS

Table 3 presents the groundwater elevation and free product thicknesses measured prior to system start up (October 27, 1994 or September 14, 1994) and the first two quarters of data recorded with the system operating on June 30, 1995 and September 21, 1995. The product thickness, which accumulates in the extraction wells, will be variable depending on the cycling of the product recovery pumps. Since we did not shut-off the product recovery pumps during monitoring, the measured thicknesses in the extraction wells do not represent long-term or average values. Rather the data indicate whether product is present in the extraction trenches.

During startup of the system in April 1995, highly variable product was observed to be flowing into extraction wells EW-2, EW-3, and EW-4. No free product was observed in well EW-1 during the first quarter, but a sheen was found during the second quarter monitoring event. Only EW-3 had more than a 1/4 inch layer of free product during the second quarter monitoring event.

The general trends observed during second quarter monitoring were consistent with first quarter monitoring.

LIMITATIONS

Work for this project was performed, and this letter prepared, in accordance with generally accepted professional practices for the nature and conditions of the work completed in the same or similar location, at the time the work was performed. It is intended for the exclusive use of the Potlatch Corporation for specific application to the referenced property.

If additional information or clarification is required, please call Barry Kellems at (206) 324-9530.

Sincerely,

HART CROWSER, INC.

TERRY MONTOYA
Project Engineer

BARRY L. KELLEMS, P.E.
Associate

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Attachments:

Table 3 Avery Landing Pre-Operation (1994) and First Quarter (6/95) and Second Quarter (9/95) Operation Groundwater Elevations and Product Thickness Data

Table 3 Avery Landing Pre-Operation (1994) and First Quarter (6/95) and Second Quarter (9/95) Operation Groundwater Elevations and Product Thickness Data

Well	Date	Depth to Product	Depth to Water	Product Thickness	T.O.C. Elevation	Groundwater Elevation	
EW-1	10/27/94	ND	11	0	95.34	84.34	
	6/30/95	ND	10.9	0	95.34	84.44	
	9/21/95	11.25	11.27	0.02	95.34	84.07	
EW-2	10/27/94	ND	10.37	0	95.24	84.87	
	6/30/95	10.57	10.89	0.32	95.24	84.35	
	9/21/95	13.9	13.92	0.02	95.24	81.32	
EW-3	10/27/94	ND	10.05	0	95.78	85.73	
	6/30/95	9.35	9.8	0.45	95.78	85.98	
	9/21/95	10.92	11.08+	0.16	95.78	84.70	
EW-4	10/27/94	ND	8.05	0	94.32	86.27	
	6/30/95	7.84	7.85	0.01	94.32	86.47	
	9/21/95	8.22	8.24	0.02	94.32	86.08	
HC-1	10/27/94	ND	13.25	0	97.5	84.25	
	6/30/95	ND	12	0	97.5	85.50	
	9/21/95	NM	13.42	0	97.5	84.08	
HC-4	10/27/94	13.3	15.34	2.04	98.94	83.60	
	6/30/95	11.89	15.49	3.6	98.94	83.45	
	9/21/95	13.67	NM	NM	98.94	85.27	
MW-4	9/14/94	ND	12.88	0	99.76	86.88	
	6/30/95	ND	10.19	0	99.76	89.57	
	9/21/95	ND	11.95	0	99.76	87.81	
MW-5	10/27/94	ND	10.45	0	97.76	87.31	
	6/30/95	ND	9.13	0	97.76	88.63	
	9/21/95	ND	10.83	0	97.76	86.93	
MW-11	9/14/94	12	NA	NA	98.16	NA	
	6/30/95	5.54	7.25	1.71	98.16	90.41	
P-1	10/27/94	ND	17.31	0	101.42	84.11	
	6/30/95	ND	16.72	0	101.42	84.70	
	9/21/95	ND	17.4	0	101.42	84.02	
P-2	10/27/94	ND	15.87	0	100.06	84.19	
	6/30/95	ND	15.26	0	100.06	84.80	
	9/21/95	ND	16.04	0	100.06	84.02	
River EW-1	10/27/94					83.12	*
	6/30/95					84.03	**
	9/21/95					83.30	
River EW-2	10/27/94					84.41	*
	6/30/95					85.32	
	9/21/95					83.53	

Table 3 Avery Landing Pre-Operation (1994) and First Quarter (6/95) and Second Quarter (9/95) Operation Groundwater Elevations and Product Thickness Data

Well	Date	Depth to Product	Depth to Water	Product Thickness	T.O.C. Elevation	Groundwater Elevation
River EW-3	10/27/94					85.16 *
	6/30/95					86.07
	9/21/95					84.45
River EW-4	10/27/94					-0.91 *
	6/30/95					87.40
	9/21/95					86.82

* River elevation was extrapolated from the river surface slope measured in 1995 and the river elevation measured south of EW-2 in 1994.

** River elevation was extrapolated from river surface slope, based on river elevations measured south of EW-2, EW-3, and EW-4 in 1995.

+ Value Estimated

ND - Not Detected

NA - Not Available

NM - Not Measured

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